Appendix A
Claims On Appeal

1. A demodulator comprising:

a system for receiving modulated signals defining received signals;

a storage device for storing initial decision boundaries for use in demodulating said modulated signals;

a system for determining the actual distance between said received signals;

a system for adjusting said initial boundaries as a function of said actual distance, defining adjusted decision boundaries; and

a system for decoding said modulated signals relative to said adjusted decision boundaries.

2. The demodulator as recited in claim 1, wherein said system for adjusting includes a system for mapping said adjusted boundaries to a decision map.

3. A demodulator comprising:

a system for receiving modulated signals defining received signals;

a storage device for storing initial decision boundaries for use in demodulating said modulated signals;

a system for determining the actual distance between said received signals relative to said initial decision boundaries;

a system for adjusting said initial boundaries as a function of said actual distance defining adjusted decision boundaries;

a system for decoding said modulated signals relative to said adjusted decision boundaries; and

a system for transmitting and decoding a predetermined training sequence defining decoded reference signals and a symbol error counter for comparing said

decoded reference signals to a predetermined training sequence to further improve the bit error rate.

5. A demodulator comprising:

a system for receiving modulated signals defining received signals;

a storage device for storing a reference constellation;

a system for determining the actual distance between said received signals;

a system for adjusting the location of said reference constellation as a function of said actual distance defining an adjusted reference constellation and storing said adjusted reference constellation; and

a system for decoding said received signals relative to said adjusted reference constellation.

6. The demodulator as recited in claim 5, wherein said system for adjusting includes a system for mapping said adjusted reference constellation to a memory map.

7. A demodulator comprising:

a system for receiving modulated signals defining received signals;

a storage device for storing a reference constellation;

a system for determining the actual distance between said received signals and said reference constellation;

a system for adjusting the location of said reference constellation as a function of said actual distance defining an adjusted reference constellation and storing said adjusted reference constellation;

a system for decoding said received signals relative to said adjusted reference constellation; and

a symbol error counter for comparing said decoded signals to a predetermined training sequence to further improve the bit error rate.

11. A method for demodulating a signal comprising the steps of:

(a) receiving modulated signals defining received signals;

(b) storing a predetermined decision boundary for demodulating said received signals;

(c) determining the actual distance between pairs of said received signals and comparing said predetermined decision boundaries with the midpoint of said distance;

(d) adjusting said predetermined boundaries so as to be at the midpoint of said actual distance defining adjusted decision boundaries;

(e) storing said adjusted decision boundaries; and

(f) decoding said received signals relative to said adjusted decision boundaries.

13. A method for demodulating a signal comprising the steps of:

(a) receiving modulated signals defining received signals;

(b) storing a predetermined decision boundary for demodulating said received signals;

(c) determining the actual distance of said received signals relative to said predetermined decision boundaries;

(d) adjusting said predetermined boundaries as a function of said actual distance defining adjusted decision boundaries;

(e) storing said adjusted decision boundaries;

(f) decoding said received signals relative to said adjusted decision boundaries defining decoded signals; and

(g) providing a symbol error counter for comparing said decoded signals to a predetermined training sequence to further improve the bit error rate.

15. A method for demodulating a signal comprising the steps of:

(a) receiving modulated signals defining received signals;

(b) storing a reference constellation;

(c) determining the actual distance between pairs of said received signals;

(d) adjusting the location of said reference constellation as a function of said actual distance defining an adjusted constellation;

(e) storing said adjusted reference constellation; and

(f) decoding said signals relative to said adjusted reference constellation.

17. A method for demodulating a signal comprising the steps of:

(a) receiving modulated signals defining received signals;

(b) storing a reference constellation;

(c) determining the actual distance between said received signals and a reference constellation;

(d) adjusting the location of said reference constellation as a function of said actual distance defining an adjusted reference constellation;

(e) storing said adjusted reference constellation;

(f) decoding said signals relative to said adjusted reference constellation; and

(g) providing a symbol error counter for comparing said decoded signals to a predetermined training sequence to further improve the bit error rate.